

Date of Report: 07/31/2006

BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- ☒ 1. Funding request for estimated emergency stabilization funds
☐ 2. Accomplishment Report
☐ 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
- ☐ 2. Interim Report #____.
- ☐ Updating the initial funding request based on more accurate site data or design analysis
- ☐ Status of accomplishments to date
- ☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name:** Dog Valley
- B. Fire Number:** UT-fif-000215
- C. State:** Utah
- D. County:** Millard
- E. Region:** 04
- F. Forest:** Fishlake National Forest
- G. District:** Fillmore
- H. Fire Incident Job Code:** P4CY5K
- I. Date Fire Started:** 16 July 2006
- J. Date Fire Contained:** 24 July 2006
- K. Suppression Cost:** \$ 1,873,645 as of 27 July 2006.
- L. Fire Suppression Damages Repaired with Suppression Funds**
- 1. Fireline waterbarred (miles):** 3.5 miles of handline & 5 miles of dozer line
 - 2. Fireline seeded (miles):** 5 miles of dozer line
 - 3. Other (identify):** 4 of 9 miles of dozer line obliterated and seeded
- M. Watershed Number:** 1603000705 & 1603000801
- N. Total Acres Burned:** 28,665
- [5,498] NFS Acres [14,918] BLM [6] Tribal [1,299] State [6,944] Private

- O. Vegetation Types:** Gambel Oak/Mountain Big Sagebrush (31%), P-J/Mountain Big Sagebrush (29%), Gambel Oak (21%), P-J/Curl-leaf Mohogany (6%), P-J/Birch-leaf Mohogany (6%), P-J/Gambel Oak (4%), Riparian (3%)
- P. Dominant Soils:** Typic Argiustolls and Pachic Argiustolls occur under the Gambel Oak and Mountain Big Sagebrush; Aridic Argiustolls and Aridic Haplustolls occur under the Pinyon-Juniper, Lithic Argiustolls and Lithic Haplustolls occur near the Curl-leaf Mountain-Mahogany; Typic Calciustolls occur under the Birch-leaf Mountain-Mahogany sites and Fluventic Haplustolls occur within the scattered riparian zone areas.
- Q. Geologic Types:** Most of the burned-area has a variety of soil resources that were derived from sedimentary rocks including limestone from the Park City and Bridal Veil Formations; sandstone from the Diamond Creek and Nugget Formations; metamorphosed sandstone in distinct areas of Tintic Quartzite – and, a few deposits of dolomite exist along the Forest boundary; dolomite is a secondary mineral very similar in composition to limestone. A small area of the burn has mixed volcanic rocks with rhyolite, latite, andesite and basalt occurring along the I-70 transportation corridor and the remainder of the burn has calcareous deposits of mixed alluvium occurring on fan terraces surrounding the the foothills.
- R. Miles of Stream Channels by Order or Class:**
 1st Order: 12.9, 2nd Order: 6.4, 3rd Order: 0.0, 4th Order: 0.0, 5th Order: 0.0

S. Transportation System

Motorized Trails: 3.2 miles **Roads:** 7.0 miles

PART III - WATERSHED CONDITION

- A. Burn Severity (acres):** 1,282 (unburned) 1,458 (low) 1,830 (moderate) 1,087 (high)
- B. Water-Repellent Soil (acres):** 1,980
- C. Soil Erosion Hazard Rating (acres):** 4,042 (low) 1,290 (moderate) 0 (high)
- D. Erosion Potential:** 16.2 tons/acre
- E. Sediment Potential:** 2,560 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period, (years):** 5
- B. Design Chance of Success, (percent):** 60
- C. Equivalent Design Recurrence Interval, (years):** 2
- D. Design Storm Duration, (hours):** 24
- E. Design Storm Magnitude, (inches):** 1.34

F. Design Flow, (cubic feet / second/ square mile):	4.3
G. Estimated Reduction in Infiltration, (percent):	20
H. Adjusted Design Flow, (cfs per square mile):	103

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats (narrative):

Threats to Life and Property

Field reviews within the burned area and downstream of the wildfire confirm that threats to life are possible, but unlikely. There is an elevated flash flood risk on the Dog Valley Creek road that is built along the canyon bottom. Thousand Dollar Gulch, which is inherently debris flow prone, is even more susceptible now that roughly two-thirds of the basin area has burned with moderate to high severity. The public could be at risk if situated below this drainage during summer thunderstorms. Stormflow from the fire drains to a depression next to the I-15 that has no outlet and has more than adequate capacity to handle anticipated post-fire floods. A debris flow out of Thousand Dollar Gulch would have about 2.5 miles of runout through deposition areas before reaching I-15 so there is no threat from this type of event.

There is a very low risk of threats to property. There are stock ponds and two corrals below the forest boundary, but neither are at risk from post-fire conditions. Increased flows and sediment will likely fill ponds. However, the earthen dams are not high hazard and would not fail catastrophically. Forest Road 108 could concentrate and reroute intercepted surface flows, which would increase stormflow peaks and erosion potential. The increased runoff and erosion could also damage the road template. There are no at-risk stream crossings on National Forest Systems lands. A communications site below National Forest that was nearly consumed by the wildfire is not at risk from post-fire conditions because it is located at the top of a stable hill.

Threats to Long-Term Soil Productivity and Ecosystem Function

Field reviews indicate potential threats to long-term soil productivity and ecosystem function. Observations of the Dog Valley post-fire conditions suggest that if no action is taken, noxious weeds and cheatgrass will expand from existing locations on and off of the forest. Areas invaded by noxious weeds can lead to a decline in effective ground cover. This could increase erosion and reduce soil productivity and desired ecosystem function, and could decrease the habitat value of the critical elk and deer winter range burned by the fire.

A comprehensive weed map and report of the Fishlake NF shows about 9,000 acres of lands infested with noxious weeds. Thus, the nearly 1.75 million acres administered by the Forest are 99.5% noxious weed-free. Generally, the Fishlake NF is considered to have an early detection rapid response noxious weed program. However, the southwest corner of the Fillmore Ranger District is the absolute center of noxious weed concerns on the Fishlake NF. Probably 25 to 30% of the acres of noxious weed infestations on the forest occur within five miles of the Dog Valley fire. The five noxious weed species present are

Scotch thistle, the most abundant noxious weed in the vicinity (Figures 1 and 2); squarrose knapweed; musk thistle; hoary cress; and field bindweed. In addition, three serious invasive species are present in the vicinity: cheatgrass (most abundant), black henbane, and houndstongue.

Threats to Water Quality

There are no perennial streams within the fire perimeter. Anticipated water and sediment from fire related flood events will be trapped in a closed depression adjacent to I-15. Therefore no threats to water quality exist.

B. Emergency Treatment Objectives (narrative):

The emergency treatment objectives are 1) to maintain soil productivity by preventing erosion and the expansion of noxious weeds and invasive plants in the burned area; 2) to maintain critical winter range for elk and mule deer; and 3) to reduce concentration of water and subsequent erosion on and below forest routes within the fire perimeter; 4) to encourage natural recovery and to protect emergency treatments from grazing by trespass livestock from private lands.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land 60% Channel 60% Roads/Trails 60% Protection/Safety 60%

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	50	80	90
Channel	70	80	90
Roads/Trails	90	80	70
Protection/Safety	90	90	90

E. Cost of No-Action (Including Loss): 848,000

F. Cost of Selected Alternative (Including Loss): 574,000

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology

☐ Fisheries ☐ Research ☐ Landscape Arch ☒ GIS

Team Leader: Dale Deiter

Email: ddeiter@fs.fed.us **Phone:** 435-896-1007 **FAX:** 435-896-9347

H. Treatment Narrative:

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

- *Herbicide Application*

Method

Weed and invasive plant expansions are likely due to the loss of protective soil cover caused by the wildfire and due to soil disturbance and possible introduction of weed seeds from fire suppression activities. Chemical treatments will reduce expansion into previously unpopulated areas by directly killing new noxious plants. Treatment will generally occur at the same time as the monitoring. Two treatments are needed for expansion areas with Scotch thistle.

Potential noxious weed expansion areas within the fire perimeter and along access routes and dozer lines will be treated with herbicides during the first year after containment of the fire to prevent expansion of weed populations. Of the 1,347 acres monitored, about 145 acres are expected to need treatment. The 14 miles of suppression dozer line will be monitored for new populations due to high risk of noxious weed establishment.

Funding for treatments after the first year will be provided either through Key Point 2 dollars or regular appropriations. Note: The Fishlake National Forest has a signed noxious weed EA with provisions for the use of herbicides.

Objective

1. Meet Forest Plan standards for noxious weed and invasive plant control using a least cost to risk strategy.
2. Reduce long-term treatment cost and avoid the resulting impacts to other resource values.
3. Protect long-term soil productivity and critical mule deer winter range.

- *Aerial Seeding*

Method

The planned seed mix includes native and introduced species that will be applied using a fixed-wing aircraft. Seeding should reduce the amount of time needed to reestablish protective ground cover, which will reduce the ability of noxious weeds and cheatgrass to expand. This treatment will help protect critical elk and mule deer winter range and could reduce erosion and flood response on areas with moderate burn severities. The

BAER seed mix may be supplemented with contributions from the Utah Division of Wildlife Resources for browse and forb species. Seeding treatments will cover 4,146 acres within the fire perimeter on National Forest System lands. Based on comparisons with untreated areas, this treatment proved effective on the 1996 Jewkes Mine, 1996 Adelaide, and 2000 Swains wildfires, which are located to the north, but in the same general vicinity as the Dog Valley fire. Indian ricegrass and Sandberg bluegrass were not used on the forest previously, but were added because of the prospect that it will provide excellent competition against the noxious weeds and cheatgrass.

With the exception of the Indian Ricegrass and Sandberg bluegrass, the species in this seed mix have been used successfully on the forest in the past for short and long-term erosion control.

Most of the seed mix will be applied in areas that receive about 14 to 20 inches of precipitation annually. Our monitoring from other burned areas in the Canyon Range and the Swains fire show that several of the species in this mix each have the ability to dominate a stand depending on the location. This underscores the value of multiple species in the seed mix. This provides the flexibility for different species in the seed mix to thrive in a microsite that is best suited for that certain species.

Specific ecological attributes valued for some of the recommended species include the following:

Bluebunch wheatgrass: "long-lived, drought tolerant, widespread"

Indian ricegrass: "valuable winter forage...one of the most drought tolerant native grasses"

Sandberg bluegrass: "important for soil stabilization and forage for wildlife...one of the first grasses to green-up in the spring...excellent in low rainfall native mixes" (This bluegrass should be very competitive with cheatgrass.)

Slender wheatgrass— "valuable in erosion control because of its rapid development"

Thickspike wheatgrass— "adapted to disturbed range sites and dry areas subject to erosion"

Crested wheatgrass— Hycrest is "a hybrid between standard and introduced...outstanding seed producer, excellent seedling vigor, easy to establish under harsh conditions"

Orchardgrass— "adapted to pinyon-juniper and mountain brush...greens up early in the spring"

Alfalfa— a legume that fixes nitrogen in the soil

Small burnet— “non-leguminous...perennial winter-active forb...can grow on low fertility soils”

Objective

1. Meet Forest Plan standards for weed and invasive plant control using a least cost to risk strategy.
2. Protect long-term soil productivity and critical mule deer winter range.
3. Possibly shortening the time required for hydrologic recovery.

Seed Mix – Noxious Weed Control			
NATIVE or INTRODUCED	COMMON NAME	SCIENTIFIC NAME	PLS LBS/ACRE
Native	Bluebunch wheatgrass “Anatone”	<i>Agropyron spicatum</i>	1
Native	Indian ricegrass “Rimrock”	<i>Oryzopsis hymenoides</i>	1
Native	Sandberg bluegrass VNS	<i>Poa sandbergii</i>	1
Native	Slender Wheatgrass “Pryor”	<i>Elymus trachycaulus</i>	3
Native	Thickspike wheatgrass “Bannock”	<i>Elymus lanceolatus</i>	0.5
Native	Thickspike wheatgrass “Critana”	<i>Elymus lanceolatus</i>	0.5
Introduced	Crested wheatgrass “Hycrest”	<i>Agropyron cristatum</i>	3
Introduced	Orchard Grass “Paiute”	<i>Dactylis glomerata</i>	1
Introduced	Alfalfa “Ladak”	<i>Medicago sativa</i>	1
Introduced	Small burnet	<i>Sanguisorba minor</i>	1
Total Pounds per Acre			13
Total Seeds per Square Foot			73
Estimated Seed Cost per Acre			\$30.50
Estimated Cost of Seed Mix per Pound			\$2.35

Channel Treatments: None

Roads and Trail Treatments:

- *Install Graded Dips*

Method

Standard grade dips are additions to the existing grade dips and are designed to handle increased runoff by dispersing the flows quickly. Forest Road 108 along Dog Valley Creek needs additional cross-drainage to properly disperse post-fire stormflows. An estimated 60 standard grade dips for 1.8 miles of road are required.

Objective

Minimize the ability of roads to exacerbate storm flow and erosional response to the burned slopes and reduce potential damage to the road system.

Protection/Safety Treatments:

- *Temporary Fencing*

Method

A two-wire electric fence will be installed to prevent livestock from private lands from entering the burned area. This fence is needed to protect emergency BAER land treatments until the private land owners can construct a new boundary fence.

Objective

Protect BAER stabilization treatments and natural recovery in areas where we cannot effectively control livestock using administrative controls or procedures.

- *Protection Signing Installation*

Method

Two entry points onto National Forest System lands, will be signed to provide warning and direction to users in the burned area. Example wording for the sign: "ATTENTION – Please help these burned areas recover. Drive only on open designated roads and trails."

Objective

1. Protect BAER emergency land treatments.
2. Promote natural recovery from fire effects.

- *Safety Signing Installation*

Method

Two major entry points onto National Forest System lands, will be signed to provide warning and direction to users in the burned area. One sign will be located near the I-15 exit and the other will be located at the National Forest boundary on Forest Road 108. Example wording for the sign: "CAUTION – Areas within and downstream of burned areas are subject to Extreme Flooding and other Hazards including falling rocks and trees."

Objective

Reduce the likelihood that forest users will be harmed by post-fire floods and falling rocks and debris.

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Noxious Weed Monitoring

The purpose of this monitoring is to determine if noxious weed populations have expanded into the fire from existing populations, along access routes, and from dozer lines. Noxious plants generally will be treated at the same point in time they are discovered. Monitoring of treatments and weed expansion beyond Year 1 will occur using Key Point 2 or appropriated funding sources.

Monitor Seeding Effectiveness

The results from the aerial seeding towards establishing effective ground cover will be evaluated in Year 1. Effective ground cover will be assessed with regards to whether or not the seeding reduced or prevented expansion of noxious weeds and cheatgrass and if potential for erosion and runoff is reduced in the first year.

Soil Erosion and Storm Flow Monitoring

Post storm event monitoring will visually assess the movement of soil and water off the mountain and into the valley below. Two storms in the first year will be monitored. Data collected by a tipping rain bucket will be used to determine the size and duration of storm events.

Note: Flooding occurred on July 30, 2006 after the passage of thunderstorm cells. Water and sediment filled ponds by I-15, but no other damages were noted. Most of the runoff appeared to have been generated from BLM and private lands affected by the fire.

Monitoring Report and Interim Requests

The specialist reports contain more details on the items to be monitored. A Year 1 monitoring report will be submitted to the RO.

Part VI – Emergency Stabilization Treatments and Source of Funds**Interim #**

Line Items	Units	NFS Lands				Other Lands				All Total \$
		Unit	# of	BAER \$	Other \$	# of	Fed	# of	Non Fed	
		Cost	Units			units	\$	Units	\$	
A. Land Treatments										
Weed Monitoring	acres	\$4.00	1,347	5,388.00	\$0		\$0		\$0	5,388.00
Herbicide Application	acres	\$80.00	145	11,600.00	\$0		\$0		\$0	11,600.00
Aerial Seed Mix	acres	\$30.50	4,146	126,453.00	\$0		\$0		\$0	126,453.00
Fixed Wing Application	acres	\$5.00	4,146	20,730.00	\$0		\$0		\$0	20,730.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
<i>Subtotal Land Treatments</i>				164,171.00	\$0		\$0		\$0	164,171.00
B. Channel Treatments										
N/A				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
<i>Subtotal Channel Treat.</i>				0.00	\$0		\$0		\$0	0.00
C. Road and Trails										
Install Graded Dips	each	\$50.00	60	3,000.00	\$0		\$0		\$0	3,000.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
<i>Subtotal Road & Trails</i>				3,000.00	\$0		\$0		\$0	3,000.00
D. Protection/Safety										
Temporary Fencing	miles	\$2,500.00	3.8	9,500.00	\$0		\$0		\$0	9,500.00
Protection Signing	each	\$400.00	2	800.00	\$0		\$0		\$0	800.00
Safety Signing	each	\$400.00	2	800.00	\$0		\$0		\$0	800.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
				0.00	\$0		\$0		\$0	0.00
<i>Subtotal Structures</i>				11,100.00	\$0		\$0		\$0	11,100.00
E. BAER Evaluation										
BAER Team	each	\$18,700.00	1	---	18700					
Supplies & Documents	each	\$450.00	1	---	450					
BARC Image	each		1	---	0					

				---			\$0		\$0	0.00
				---	\$0		\$0		\$0	0.00
<i>Subtotal Evaluation</i>				---	\$19,150		\$0		\$0	19,150.00
F. Monitoring										
Year 1 + Report	each	\$4,000.00	1	4,000.00	\$0		\$0		\$0	4,000.00
				0.00	\$0		\$0		\$0	0.00
<i>Subtotal Monitoring</i>				4,000.00	\$0		\$0		\$0	4,000.00
G. Totals				182,271.00	\$19,150		\$0		\$0	201,421.00
Previously approved				0.00						
Total for this request				182,271.00						

PART VII - APPROVALS

1. _____
Mary C. Erickson
Forest Supervisor (signature) _____
Date

2. _____
Jack G. Troyer
Regional Forester (signature) _____
Date